

**THE ADOLESCENT LITERACY COACHING PROJECT (ALCP)**  
**Differences in Literacy Environment and CATS Scores in Schools With Literacy Coaches**  
**and Schools Without Coaches**  
**(Addendum to Year 1 Evaluation Report)**

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**Overview**

The Adolescent Literacy Coaching Project (ALCP) was created when the Kentucky General Assembly passed legislation in 2005 requiring that students who are struggling with reading and mathematics or are not proficient on statewide tests be provided with interventions and instructional modifications. While much of the law focused on providing mathematics support, a small section of the legislation required the development of a statewide program to train literacy coaches to assist teachers of grades 4-12. The Kentucky Department of Education contracted the development and management of the program to the Collaborative Center for Literacy Development (CCLD), a collaborative of eight state universities housed at the University of Kentucky.

The first cadre of ALCP coaches began their two-year training and started working in their schools in 2006-07. During the first year, 22 coaches served 26 schools in 14 school districts. As part of the evaluation of the ALCP, for each ALCP school, a comparison school was identified that had similar reading test score trends and similar demographics to the ALCP school. The researchers contacted the principals at each potential comparison school to make sure that the comparison school *did not* have a literacy coach on staff.

Throughout the research project, ALCP and comparison schools will administer surveys on the school literacy environment each spring to teachers of grades 4-12 in the content areas of reading/language arts, mathematics, science and social studies (the target grades for ALCP coaches). Survey results from the two types of schools will then be compared to determine what differences exist, if any, in the literacy environment of schools that have coaches compared to schools that do not.

In addition, state test scores of ALCP schools will be compared with those of the comparison schools. A cautionary note is needed about interpreting the test score comparisons, however. First, there is much work to be done in preparing literacy coaches and rolling out their work before the ultimate goal of improved student learning will be realized. The International Reading Association's (IRA) standards for middle and high school literacy coaches state that "A literacy coach working at any grade level is more concerned with teachers' learning and growth than with students' learning and growth" (IRA 2006, p. 43). This document goes on to say, "Though student learning and growth are the eventual goals of all coaching programs, the immediate need is to focus the coach's role on adult learning" (IRA 2006, p. 44). In addition, the IRA standards document points out "it takes two to three years for most [coaches] to develop the full complement of coaching skills" (IRA, 2006, p. 5). Cathy Toll, former director of the Center for Literacy at NCREL and now director of a consulting firm specializing in literacy coaching, comments, "As a literacy coach, your most significant clients are teachers. Student achievement

is the teachers' desired outcome, and you are there to help achieve that goal, but your focus is teachers" (Toll, 2005, p. 4). Therefore, the prudent approach to evaluation of the coaching model is to first develop a picture of what the coaching model looks like, both in design and practice; then to analyze the influence of the coach on the school environment and adult learning. Analysis of student achievement data should be part of the evaluation to determine whether the coach's influence on adult learning and school environment is correlated with student achievement, but such correlations are likely to occur only after the coach's work has been underway for a period of time. Test score results shared in this report, then, should be considered baseline data.

With these provisos in mind, this report shares results of the literacy environment surveys administered in ALCP and comparison schools after the coaches had been in place for one year. The surveys were administered in May 2007. In addition the results of the analysis of state test scores from the 2006-07 school year are shared.

## Major Findings

**Survey results.** When survey results from teachers in ALCP schools were compared with those of teachers in schools that did not have literacy coaches, the literacy environment in schools with literacy coaches differed by statistically significant margins from schools without coaches in these ways:<sup>1</sup>

- A higher percentage of ALCP schools were engaged in strategic planning around literacy;
- Higher proportions of teachers in ALCP schools received professional development on improving student reading skills in their content areas;
- Teachers in ALCP schools reported more frequent use of a variety of strategies to improve student literacy skills in their classrooms;
- Teachers in ALCP schools reported requesting help with literacy issues more frequently; and
- Teachers in ALCP schools reported receiving more frequent help in these areas:
  - Selecting literacy materials,
  - Developing literacy strategies in the classroom,
  - Developing and administering classroom literacy assessments, and

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<sup>1</sup> There were not significant differences between the two types of schools in the amount of assistance teachers received in the area of writing instruction, or in analyzing and using assessment data on student literacy skills. The lack of differences in these areas is likely due to the fact that the state assessment system has included a strong writing component for many years, and that the state-mandated school improvement planning process requires extensive analysis and use of assessment data. Thus, it is to be expected that most Kentucky schools would be providing teachers with assistance in these areas, regardless of whether there is a literacy coach on staff.

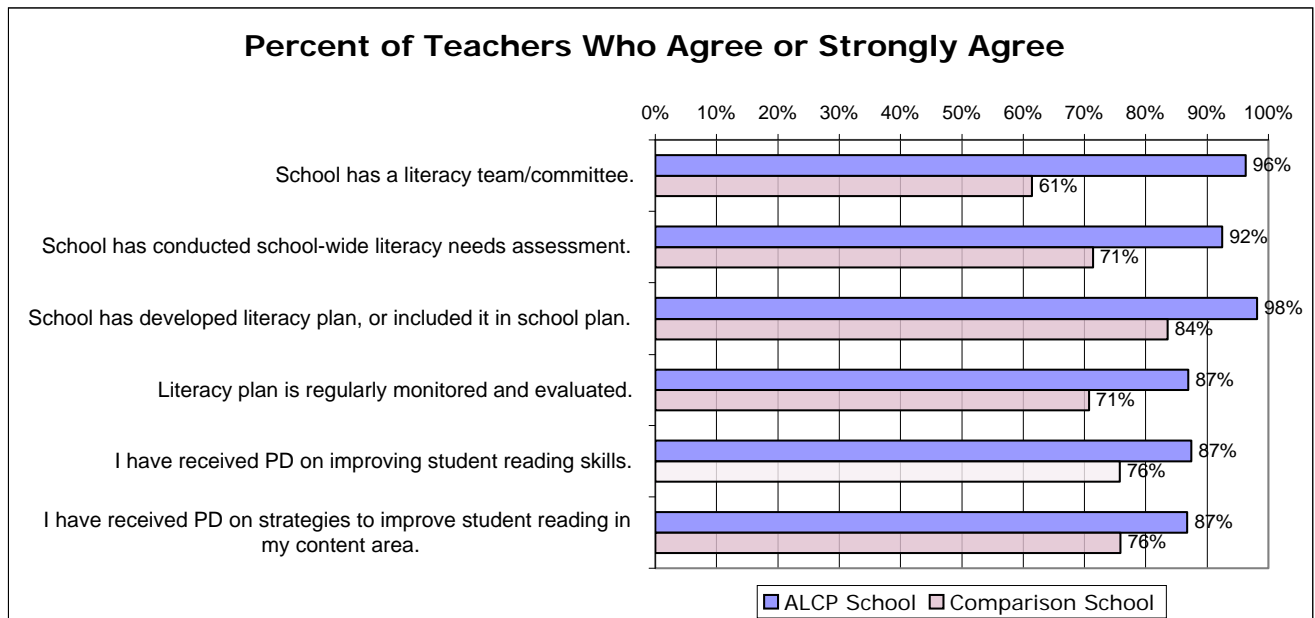
- Receiving information and resources around literacy.

**Baseline test score comparisons.** An analysis was done of the performance of ALCP schools, as compared to non-ALCP schools, on the following measures from the Commonwealth Accountability Testing System (CATS): overall academic index, as well as the academic indices for the four main subject areas on which literacy coaches are to focus: reading, mathematics, science, and social studies. In addition, the performance of ALCP schools on these measures was compared to all K-12 schools in Kentucky. Results showed that, after one year of literacy coaching, there was very little difference between ALCP schools and non-ALCP schools on any variable. This analysis should be considered a baseline comparison, given that literacy coaches had not yet completed their training program and had been working as literacy coaches in their schools for less than one year. Differences in test performance of ALCP and non-ALCP schools after less than a year of coaching, then, were not expected. The survey results noted above, however, do indicate that the literacy culture in ALCP schools is beginning to change, which should lead to improved instruction and increased student achievement.

## Details on Major Findings

**Survey results.** Results of the surveys showed that responses of teachers in ALCP schools differed from those in the comparison schools by statistically significant margins on several items. Figure 1 displays the differences that were revealed on items related to strategic planning and professional development around literacy.

**Figure 1: Aspects of the Literacy Environment That Differed in ALCP and Comparison Schools by Statistically Significant Margins**

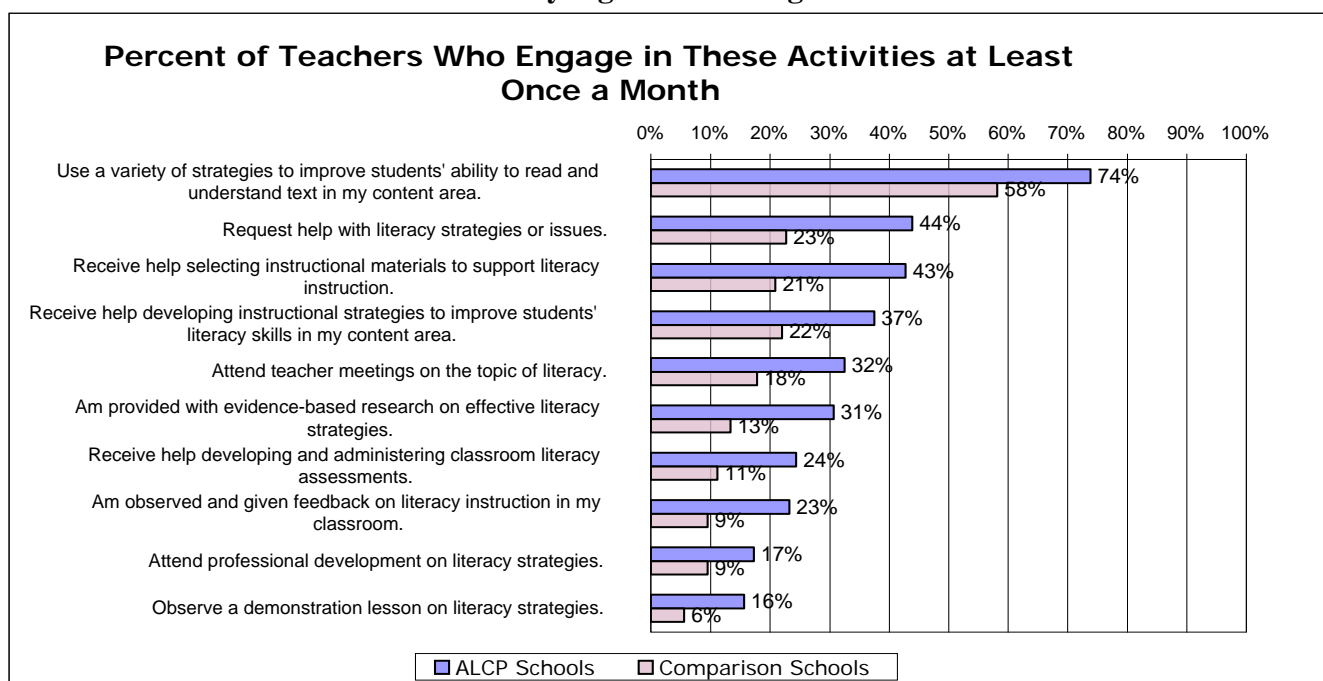


These results reveal that a larger percentage of teachers in ALCP schools than in comparison schools reported that the school had a literacy committee, had conducted a school-

wide literacy needs assessment, and had a literacy plan that was regularly monitored. Teachers in ALCP schools also reported in significantly greater numbers that they had received professional development to improve students' reading skills.

Another set of survey questions asked teachers how often they engaged in specific activities related to literacy. These activities correspond to the IRA coaching standards. Results for ALCP schools differed from those of comparison schools by statistically significant margins on several of these items, as shown in Figure 2.

**Figure 2: Literacy Activities That Differed in ALCP and Comparison Schools by Statistically Significant Margins**



For the items displayed in Figure 2, teachers were asked if they engaged in these activities never, a few times a year, once or twice a month, once or twice a week, or daily. The results shown above aggregate response for teachers who said they engaged in the activities at least once or twice a month. As the graph reveals, a significantly higher proportion of teachers in ALCP schools reported more frequent use of literacy strategies in their classrooms, and that they requested help with literacy strategies. They also reported more frequently receiving help in a variety of areas related to literacy, including selecting instructional materials, developing instructional strategies, developing and administering classroom assessments, being observed, and observing demonstration lessons.

There were a number of items for which results for ALCP schools did not differ from those of comparison schools by statistically significant margins. These items included:

- Sharing of instructional strategies among teachers;
- Receiving assistance developing writing assignments and strategies;

- Receiving professional development on the reading demands of textbooks and materials in the content areas;
- Receiving alternative reading material to help improve student understanding in the content areas;
- Frequency of teachers assessing literacy needs of individual students;
- Frequency of analysis of student work in the area of literacy;
- Frequency with which teachers receive help analyzing test data in their content areas; and
- Frequency with which teachers receive help using analysis of test data to determine which strategies will improve student achievement.

These analyses revealed the following key differences between the literacy environment of schools with ALCP coaches and schools without literacy coaches:

- A higher percentage of ALCP schools appeared to be engaged in strategic planning around literacy;
- Higher proportions of teachers in ALCP schools received professional development on improving student reading skills in their content areas;
- Teachers in ALCP schools reported more frequent use of a variety of strategies to improve student literacy skills in their classrooms;
- Teachers in ALCP schools reported requesting help with literacy issues more frequently; and receiving more frequent help in selecting literacy materials, developing literacy strategies in the classroom, developing and administering classroom literacy assessments, and receiving information and resources around literacy.

**Test score analysis.** Due to changes in the CATS system between 2005-06 and 2006-07, the analysis of state test scores was not able to use a change score (i.e., the difference between the two years' reading indices) as a measure of ALCP effect. But because the 2006 reading and academic indices are highly correlated with the 2007 reading index, use of the 2006 reading and academic index scores as covariates allowed the comparison of the performance of ALCP and non-ALCP schools by determining whether there was improvement beyond what would be expected from a knowledge of the 2006 reading and academic indices.

The analysis found no significant differences between ALCP and non-ALCP schools, even when previous academic performance and other covariates known to influence achievement have been taken into account. This is not necessarily an indication that ALCP has had no effect in the participating schools. ALCP has just completed its first year of operation, and such effects often take more than one year to develop. Similar studies in subsequent years may well find significant effects for ALCP participation.

A full report of the test score analysis, performed by statistician Terry Hibpshman, is provided in Appendix A.

## Summary

Results of the quasi-experimental component of the ALCP evaluation found that there were significant differences between the literacy environment of schools with ALCP coaches and

schools without literacy coaches. Schools with ALCP coaches were providing more direct assistance and professional development to teachers around reading strategies, particularly in the content areas. In addition, in ALCP schools, there was reportedly more strategic planning occurring around literacy, including establishing literacy committees, conducting school-wide literacy needs assessments, and developing and monitoring literacy plans. These activities are very much in line with guidelines and research on literacy coaching, which suggest that—in addition to establishing trust and rapport—coaches should begin their work by emphasizing strategic planning around the school’s literacy data.<sup>2</sup> Survey results, then, indicate that ALCP coaches in their first year of work were making a difference in their school’s literacy environments in ways that would be expected in the first year.

While it cannot be stated with certainty that the differences noted above were due to the work of the literacy coach, survey results correspond closely to interview data on the activities of literacy coaches. For instance, coaches, principals, and teachers reported that coaches spent much of their time sharing strategies and instructional materials with teachers, and the survey shows that a higher percentage of teachers in ALCP schools received this sort of help than did teachers in comparison schools. Thus, it seems likely that the coaches played a strong role in the differences that were noted between schools with coaches and schools without coaches.

As noted earlier, the lack of differences between the test scores of ALCP and non-ALCP schools is not surprising, given that the literacy coaches have not yet completed their training, and had been at their work for slightly less than a year at the time the tests were administered. Because coaches work directly with teachers rather than students, the effects on students will be indirect. Survey results indicate that the literacy environment in the schools has already begun to change, which is where one would expect to see changes in the first year of literacy coaching. If the instructional practices and supports promoted by the coaches are sustained, and if the coaches' expertise develops as expected, then improvements in student achievement should be on the horizon.

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<sup>2</sup> See, for instance: Bean & DeFord, ND; Buly et al, 2006; International Reading Association, 2006; Neufeld & Roper, 2003; and Toll, 2005.

## References

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**Appendix A:**  
**RESULTS OF TEST SCORE ANALYSIS: ALCP**  
**By Terry Hibpshman**  
**December 2007**

This is a brief evaluation of the performance of the Adolescent Literacy Coaching Project (ALCP), a project of the Collaborative Center for Literacy Development (CCLD) that involves the Kentucky Department of Education (KDE) and eight regional universities in Kentucky. The project trains literacy coaches who work in Kentucky schools to assist other teachers to refine instructional practices relevant to literacy. The project completed its first year of operation in the 2006-2007 school year.

ALCP is a capacity-building model for school improvement that involves multiple components, and this brief evaluation is not intended to evaluate all of the project's operations. We confine our analysis here to a single question, whether the project has had the effect of improving reading and/or overall academic achievement in schools associated with the project.

The only data about such matters available to us are the CATS indexes published at the end of each school year by the Office of Assessment and Accountability in KDE. These complex indices comprise a weighted measure of the performance of individual students on the state's accountability measure, the KCCT tests, which are given in April each year. In principle, if ALCP services, which operate on a school-wide basis, are effective, ALCP schools should be expected to demonstrate higher index scores than non-ALCP schools, *ceteris paribus*. That is, when all other factors are accounted-for, ALCP schools should on average have higher academic indices, particularly in reading, than non-ALCP schools.

#### Method

Two approaches were used to evaluate possible differences between ALCP and non-ALCP schools:

1. For each ALCP school, a matching "comparison" school was chosen from schools not involved in the ALCP project, and which were not served by a literacy coach from any other project or funding source. Comparison schools were matched on level, region, and 2006 index scores. Index scores and values of covariate variables were collected for each set of schools.
2. ALCP schools were compared to all K-12 schools in Kentucky, using appropriate measures of school level, an ALCP indicator, and appropriate covariate measures.

The covariate measures used in the study included free and reduced price lunch participation and the percent of white students in the school. In both cases, covariance analysis was conducted using the SAS PROC GLM procedure. Variables were entered sequentially into each model, with ALCP status alone entered first, followed by index scores and then the school level and covariate measures.

#### Results



## 1. Comparison Schools model

Table 1 gives descriptive statistics for the ALCP and comparison schools used in approach 1. There is very little difference between the two groups of schools on any variable.

**Table 1**  
**Descriptive Statistics for ALCP and Comparison Schools**

	non-ALCP Schools			ALCP Schools		
	Mean	SD	N	Mean	SD	N
Reading_2006	85.92	8.26	32	85.35	9.887647	30
math_2006	72.55	16.26	32	76.62	14.65467	30
Science_2006	81.80	15.34	32	82.90	20.80974	30
social_studies_2006	77.40	16.28	32	78.80	16.19083	30
index_2006	76.58	11.35	32	77.85	12.80247	30
index_2007	85.39	9.92	32	83.95	18.46822	30
Reading_2007	91.69	8.10	32	89.90	18.4563	30
math_2007	81.88	13.69	32	80.85	20.13067	30
Science_2007	85.78	21.11	32	89.39	23.76502	30
social_studies_2007	81.25	19.71	32	82.07	22.12467	30
frp_pct	64.30%	0.2057	32	63.53%	0.1566	30
ASIAN_PCT	0.21%	0.0042	32	0.34%	0.0068	29
BLACK_PCT	4.39%	0.0924	32	5.12%	0.1118	29
HISPANIC_PCT	6.22%	0.1794	32	2.72%	0.0539	29
INDIAN_PCT	0.09%	0.0021	31	0.11%	0.0015	29
WHITE_PCT	91.19%	0.1136	31	91.00%	0.1669	29

Table 2 shows the relationship between ALCP participation and the 2007 reading index, without adjustment for any other variable. Note that there is no difference between ALCP and comparison schools, and that the R-square (a measure of the amount of variance accounted-for by the model) is effectively zero. Note that the R-square is [what?]

**Table 2**  
**Comparison Schools Approach**  
**Unadjusted Model**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	49.75402	49.75402	0.25	0.6185
Error	60	11913.51849	198.55864		
Corrected Total	61	11963.27251			

<b>R-Square</b>	<b>Coeff Var</b>	<b>Root MSE</b>	<b>reading_2007 Mean</b>
0.004159	15.51468	14.09108	90.82419

Source	DF	Type I SS	Mean Square	F Value	Pr > F
alcp_flag	1	49.75401780	49.75401780	0.25	0.6185

Source	DF	Type III SS	Mean Square	F Value	Pr > F
alcp_flag	1	49.75401780	49.75401780	0.25	0.6185

Table 3 shows the results when all of the available variables were added to the analysis. Note that there is a significant effect for the 2006 reading score, and a significant effect for school level (elementary schools have slightly higher reading scores), but that there is no significant effect for ALCP participation when these other factors have been accounted-for. The school level effect, present in the Type I table, vanishes in the Type III table, and free and reduced-price lunch shows an effect in the Type III table which is not present in the Type I table. Type I and Type III sums of squares are computed based on slightly different model assumptions. Type I effects portray the results of sequential entry of variables into the model, while Type III effects do not. Type III effects are widely believed to be better estimates in this type of problem. Note that the R-square for the model is .46, indicating that just under half of the variance has been accounted-for by the variables included.

**Table 3**  
**Comparison Schools Approach**  
**All Variables in model**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	1508.395451	251.399242	7.60	<.0001
Error	53	1752.573182	33.067419		
Corrected Total	59	3260.968633			

R-Square	Coeff Var	Root MSE	reading_2007 Mean
0.462561	6.249220	5.750428	92.01833

Source	DF	Type I SS	Mean Square	F Value	Pr > F
alcp_flag	1	53.975893	53.975893	1.63	0.2070
reading_2006	1	1106.354315	1106.354315	33.46	<.0001
frp_pct	1	56.252777	56.252777	1.70	0.1978
WHITE_PCT	1	95.016550	95.016550	2.87	0.0959
Elem	1	195.046048	195.046048	5.90	0.0186
Midsch	1	1.749867	1.749867	0.05	0.8189

Source	DF	Type III SS	Mean Square	F Value	Pr > F
alcp_flag	1	28.6397564	28.6397564	0.87	0.3563
reading_2006	1	342.9963994	342.9963994	10.37	0.0022
frp_pct	1	169.3497948	169.3497948	5.12	0.0278
WHITE_PCT	1	104.0998522	104.0998522	3.15	0.0818
Elem	1	77.3647946	77.3647946	2.34	0.1321
Midsch	1	1.7498670	1.7498670	0.05	0.8189

2. All schools model

Table 4 shows the results for ALCP status, using all Kentucky schools, not adjusted for other variables. Note that as with the comparison schools model, there is no effect for ALCP participation, and the R-square is effectively zero.

**Table 4**  
**All Schools Approach**  
**Unadjusted Model**

<b>Source</b>	<b>DF</b>	<b>Sum of Squares</b>	<b>Mean Square</b>	<b>F Value</b>	<b>Pr &gt; F</b>
Model	1	41.8367	41.8367	0.54	0.4629
Error	1490	115617.0777	77.5954		
Corrected Total	1491	115658.9144			

<b>R-Square</b>	<b>Coeff Var</b>	<b>Root MSE</b>	<b>reading_2007 Mean</b>
0.000362	9.414654	8.808823	93.56501

<b>Source</b>	<b>DF</b>	<b>Type I SS</b>	<b>Mean Square</b>	<b>F Value</b>	<b>Pr &gt; F</b>
alcp_flag	1	41.83669974	41.83669974	0.54	0.4629

<b>Source</b>	<b>DF</b>	<b>Type III SS</b>	<b>Mean Square</b>	<b>F Value</b>	<b>Pr &gt; F</b>
alcp_flag	1	41.83669974	41.83669974	0.54	0.4629

Table 5 shows the results for the all-schools approach, using covariates. Note that the R-square for this model is about .64, indicating that nearly two-thirds of the variance has been accounted for by this model. Note also that with the exception of ALCP participation, which has no significant relationship with the 2007 reading score, all of the variables in the model show significant relationships. This is markedly different from the results of the comparison schools approach, and is probably due to restriction of range in the comparison model due to pre-selection of comparison schools to closely match the values of the ALCP schools.

<b>Source</b>	<b>DF</b>	<b>Sum of Squares</b>	<b>Mean Square</b>	<b>F Value</b>	<b>Pr &gt; F</b>
Model	7	69136.3305	9876.6186	356.01	<.0001
Error	1428	39616.8693	27.7429		
Corrected Total	1435	108753.1999			

<b>R-Square</b>	<b>Coeff Var</b>	<b>Root MSE</b>	<b>reading_2007 Mean</b>
0.635718	5.628071	5.267153	93.58718

<b>Source</b>	<b>DF</b>	<b>Type I SS</b>	<b>Mean Square</b>	<b>F Value</b>	<b>Pr &gt; F</b>
alcp_flag	1	10.06599	10.06599	0.36	0.5470
reading_2006	1	56792.64389	56792.64389	2047.11	<.0001
index_2006	1	9087.70335	9087.70335	327.57	<.0001
frp_pct	1	1977.86529	1977.86529	71.29	<.0001

WHITE_PCT	1	836.15918	836.15918	30.14	<.0001
Elem	1	293.06900	293.06900	10.56	0.0012
Midsch	1	138.82381	138.82381	5.00	0.0254

Source	DF	Type III SS	Mean Square	F Value	Pr > F
alcp_flag	1	2.424449	2.424449	0.09	0.7676
reading_2006	1	2190.802713	2190.802713	78.97	<.0001
index_2006	1	4523.332090	4523.332090	163.04	<.0001
frp_pct	1	2360.636621	2360.636621	85.09	<.0001
WHITE_PCT	1	936.797832	936.797832	33.77	<.0001
Elem	1	426.547664	426.547664	15.38	<.0001
Midsch	1	138.823812	138.823812	5.00	0.0254

**In addition to the above analyses, we conducted a number of analyses using different variables. No model using any method accounted for more variance than did the all-schools model described above. We used a simple OLS (ordinary least squares) model to obtain the direction of the relationships between variables, and found the results not much different from the models above. The relationship between the 2007 reading index and the 2006 reading index, the 2006 academic index, the percentage of white students, and the elementary indicator were all positive. The relationship between the 2007 reading index and the free and reduced-price lunch and middle school indicator were negative.**

### Discussion

The reason for including covariates in the analysis is to control for context effects that might obscure a difference between the performance of ALCP and non-ALCP schools, and to deal with an artifact of the CATS system. Context effects would obscure a real difference if ALCP schools were different on some Factor(s) that affect learning such as minority composition or poverty levels of the student population. These factors have a well-known influence on school achievement levels, and if ALCP schools were markedly different from non-ALCP schools on these factors, a real improvement in reading or overall achievement might not be detectable if their influence is not removed.

The difficulty with the CATS system for the 2006-2007 school year is that because CATS changed its methodology between the 2005-2006 and 2006-2007 school years, we could not use a change score (i.e. the difference between the two years' reading indices) as a measure of ALCP effect. But because the 2006 reading and academic indexes are highly correlated with the 2007 reading index, use of the 2006 reading and academic index scores as covariates allows us to compare the performance of ALCP and non-ALCP schools, by determining whether there was improvement beyond what would be expected from a knowledge of the 2006 reading and academic indices.

The results of the analysis demonstrate that no difference can be detected between ALCP and non-ALCP schools, even when previous academic performance and other covariates known to influence achievement have been accounted-for. This is not necessarily an indication that ALCP has had no effect in the participating schools. ALCP has just completed its first year of

operations, and such effects often take more than one year to develop. Similar studies in subsequent years may well find significant effects for ALCP participation.